P16 EVO (KD), P16 EVO AVC

Tube-to-tube-sheet orbital weld heads

The further developed P16 EVO series combines the economy and reliability of its predecessor with simplified handling and extended functionality: highest weld seam quality - reproducible thousands of times.

Reliable - power transmission with rotary coupling	✓
Adjustable without tools - Balance suspension with increased adjustment range	✓
Flexible operation - control panel integrated into the handle	✓
Easy operation - Optimized quick-change system for torches	✓
Precise - adjustment of the Wire feed tension	✓
Solid - stainless steel screws for fine adjustment of torch and wire nozzle	✓
Adjustable without tools - 3-point support welding head on tube sheet	✓



Tube-to-tube-sheet weldings at generously dimensioned heat exchangers with highest precision and efficiency

The P16 EVO TIG tube-to-tube-sheet weld head is the result of continuous further development of the proven P series. Tool-free balancing and integrated control keypad increase operating convenience. The use of high-quality components and materials raises the precise reproducibility of welds to a new level.

Liquid cooling up to the torch head ensures the consistent quality of the welding process and increases the duty cycle. The reliability of the current transmission is increased by the use of the new graphite coupling. The torch head, which can be continuously tilted by up to 30 degrees, enables complex applications in confined spaces.

Features:

- Current transfer: Rotating clutch
- Gas water transfer: Rotating coupling
- Flexible operation via control panel in the handle
- Precise and comfortable balancing due to tool-free adjustable balance suspension with enlarged adjustment range
- Completely liquid-cooled weld head housing
- Torch head can be swiveled steplessly up to 30° (reduced diameter area)
- Weld seam geometries: Recessed, flush and protruding tubes
- Three-point support made of stainless steal
- Manual electrode position setting: Stroke +/- 5 mm
- Adaptable to special torches, e.g. box header, inner torch (with/without cold wire)
- Positioning in tube to be welded per centering cartridge, which is placed on an arbor (optionally available)
- Weld heads with cold wire unit are additionally equipped with a cold-wire feed mounted directly on the weld head, including a mounting gear for a D 100 mm/1 kg (3.937"/2.2 lbs) standard wire coil
- Wire feeder following on the rotating axis of the TIG torch to prevent spin of the filler wire while running out of the wire nozzle
- Including stainless steel 3-point support adjustable without tools
- Including 7.5 m (24.6 ft) hose package and tool set

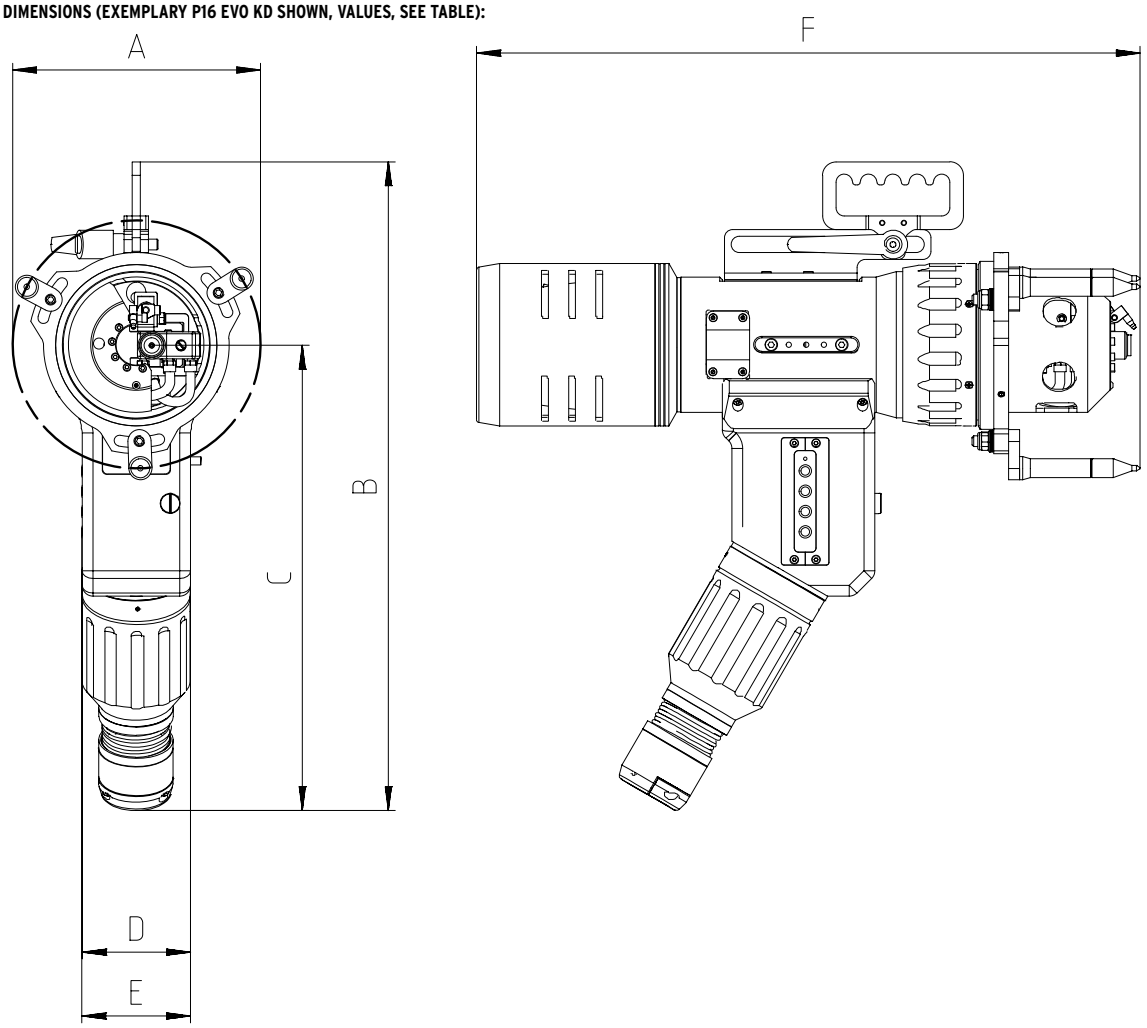
Additional characteristics P16 EVO AVC:

- With electric arc distance control (AVC) - can only be used in combination with the ORBIMAT 300 CA AVC/OSC welding power source.



Integrated control panel

DIMENSIONS (EXEMPLARY P16 EVO KD SHOWN, VALUES, SEE TABLE):



DIMENSIONS	P16 EVO	P16 EVO KD	P16 EVO AVC
Dimension "**A**"	183,00 mm 7.204 in	183,00 mm 7.204 in	184,00 mm 7.244 in
Dimension "**B**"	478,84mm 19.202 in	478,84mm 19.202 in	478,84mm 19.202 in
Dimension "**C**"	343,40 mm 13.504 in	343,40 mm 13.504 in	344,74 mm 13.572 in
Dimension "**D**"	80,00 mm 3.150 in	80,00 mm 3.150 in	80,00 mm 3.150 in
Dimension "**E**"	80,20 mm 3.157 in	80,20 mm 3.157 in	80,20 mm 3.157 in
Dimension "**F**"	357,31 mm 14.067 in	489,81 mm 19.284 in	591,50 mm 23.287 in
APPLICATION AREA		**P16 EVO**	**P16 EVO AVC**
Code	with cold wire	833 000 001	833 000 002
	Without cold wire	833 000 003	-
From tube ID to tube OD		10 - 78 mm* 0.394 - 3.071 in*	20 - 100 mm** 0.787 - 3.937 in**
TECHNICAL SPECIFICATIONS		**P16 EVO**	**P16 EVO AVC**
Weight machine including hose package	with cold wire	17.5 kg 38.6 lbs	18.3 kg 40.3 lbs
	Without cold wire	16.2 kg 35.7 lbs	-
Weight additional wire unit		1.0 kg 2.2 lbs	1.0 kg 2.2 lbs
Additional wire unit Ø		0.8 mm 0.03 in	0.8 mm 0.03 in
Hose package length		7.5 m 24.6 ft	7.5 m 24.6 ft

*Expandable OD 20 mm to OD 126,00 mm (0.787 in - 4,016 in)
** Expandable from OD 10- OD 140 mm (0.394 in - 5.512 in)

Technical specifications are non-binding. They do not constitute any assurance of properties. We reserve the right to make changes.

SCOPE OF DELIVERY	
Including:	• 1 tube-to-tube-sheet orbital weld head P16 EVO, or P16 EVO AVC • 1 three-point support • 1 transport case • 1 tool set • 1 set of operating instructions and spare parts list • General safety instructions Tube rewelding heads
Suitable accessories (optionally available):	• Centering cartridges and arbors • Special torch (box header torch, rear sheet torch) • Quick-change adapter torch equipment • Cold-wire feeds KD • Balancer spring • Closed gas cover • Front cage • ESG electrode grinders • Ground cable • Hose package extensions • Double pressure reducer • WS2 tungsten electrodes

Tube-to-tube-sheet orbital weld heads



P16 EVO KD



P16 EVO AVC KD

P16 EVO, P16 EVO KD, P16 EVO AVC

The following accessories are mandatory for the use of the tube-to-tube-sheet orbital weld heads and must be ordered separately:

- Arbors and centering cartridges
- Ground cable

ITEM	CODE	MACHINE WEIGHT KG*	SHIPPING WEIGHT KG
Tube-to-tube-sheet orbital weld head P16 with cold wire	**833 000 001**	17.500	26.500
Tube-to-tube-sheet orbital weld head P16 without cold wire	**833 000 003**	16.200	25.100
Tube-to-tube-sheet orbital weld head P16 AVC with cold wire	**833 000 002**	18.300	27.300

* Machine weight including hose package

Suitable accessories (optionally available):

- Centering cartridges and arbors
- Ground cable
- Special torch (box header/rear sheet)
- Quick-change adapter torch equipment
- Balancer spring
- Closed gas cover
- Front cage
- Remote control

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Accessories for P16 EVO, P16 EVO AVC

Special torches

Individual special torches for following welding positions are available on request:

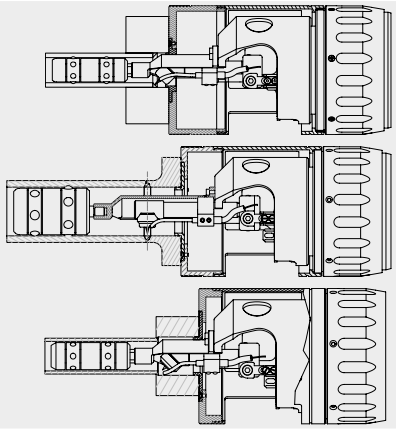
Box header torch





Box header torch

Inner torch:
For welding of recessed tubes and rear sheet applications

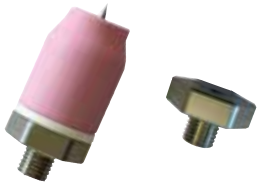


ITEM	CODE
Box header torch	**on request**
Inner torch	**on request**

Quick-change adapter torch equipment

Through this quick-change adapter the torch equipment of the tube-to-tube-sheet orbital weld heads P16 and P16 AVC, can be set up comfortably and exchanged faster, irrespective of the torch.

ITEM	CODE	KG
Quick-change adapter torch equipment	**831 050 019**	0.012



Quick-change adapter torch equipment

Cold-wire feeds KD (retrofitting kits)

For refitting of tube-to-tube-sheet orbital weld heads without wire unit.
Wire coil mounting for Ø 100 mm/1 kg (3.937"/2.2 lbs) standard coils.

ITEM	CODE	KG
Cold-wire feed P16/P16 AVC	**831 001 116**	1.500

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Balancer spring

Balancer spring

For load-free hanging of tube-to-tube-sheet orbital weld heads.

ITEM	TENSILE LOAD MAX. [KG]	CODE	KG
Balancer spring for P16	10 - 14	**832 030 002**	3.800
Balancer spring for TX38P//HX-Series	6 - 8	**832 020 001**	2,370



Closed gas cover

Closed gas cover

For welding of titanium tubes under full gas cover.

ITEM	CODE	KG
Closed gas cover for P16	**831 001 101**	1.300
Forming gas cover P16 AVC	**831 030 004**	



Front cage

Front cage

With bearing ring.
Ideal for welding of tube-to-tube-sheet applications with flush or recessed tubes.

ITEM	CODE	KG
Front cage with support ring for P16 (EVO)	**831 050 001**	0.360
Front cage with support ring for P16 (EVO) AVC	**831 050 003**	0.965

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Centering cartridges and arbors

The inner diameter of the tube is definitive for the selection of the correct centering cartridge. Smaller and larger dimensions on request.

Please ensure matching centering cartridge/arbor combination.



Centering cartridges



Arbor

ITEM	GROUP	CARTRIDGE SIZE/ NO.	TUBE ID* [MM]	TUBE ID* [INCH]	CODE	KG
Arbor for centering cartridge for group A					**832 020 003**	0.060
Centering cartridge	A	1	10.0 - 10.5	0.394 - 0.413	**832 020 004**	0.040
Centering cartridge	A	2	10.5 - 11.0	0.413 - 0.433	**832 020 005**	0.050
Centering cartridge	A	3	11.0 - 11.5	0.433 - 0.452	**832 020 006**	0.070
Centering cartridge	A	4	11.5 - 12.0	0.452 - 0.472	**832 020 007**	0.070
Centering cartridge	A	5	12.0 - 12.5	0.472 - 0.492	**832 020 008**	0.080
Centering cartridge	A	6	12.5 - 13.0	0.492 - 0.512	**832 020 009**	0.100
Centering cartridge	A	7	12.8 - 14.0	0.504 - 0.551	**832 020 011**	0.110
Arbor centering cartridge for group B					**832 020 010**	0.070
Centering cartridge	B	8	13.8 - 15.0	0.543 - 0.591	**832 020 012**	0.120
Centering cartridge	B	9	14.8 - 16.0	0.583 - 0.630	**832 020 013**	0.140
Centering cartridge	B	10	15.8 - 17.0	0.622 - 0.669	**832 020 014**	0.150
Centering cartridge	B	11	16.8 - 18.0	0.661 - 0.709	**832 020 015**	0.180
Centering cartridge	B	12	17.8 - 19.0	0.701 - 0.748	**832 020 016**	0.190
Centering cartridge	B	13	18.8 - 20.5	0.740 - 0.807	**832 020 017**	0.200
Centering cartridge	B	14	19.8 - 22.5	0.780 - 0.886	**832 020 018**	0.250
Grub screw for arbor for group B					**832 001 025**	
Arbor centering cartridge for group C					**832 020 019**	0.115
Centering cartridge	C	15	22.3 - 24.6	0.878 - 0.969	**832 020 020**	0.340
Centering cartridge	C	16	24.5 - 27.0	0.965 - 1.063	**832 020 021**	0.350
Centering cartridge	C	17	26.5 - 29.0	1.043 - 1.142	**832 020 022**	0.360
Centering cartridge	C	18	28.5 - 31.0	1.122 - 1.220	**832 020 023**	0.400
Centering cartridge	C	19	30.5 - 33.0	1.201 - 1.299	**832 020 024**	0.500
Centering cartridge	C	20	32.5 - 36.0	1.280 - 1.417	**832 020 025**	0.510
Centering cartridge	C	21	35.5 - 39.0	1.397 - 1.535	**832 020 026**	0.530
Centering cartridge	C	22	38.5 - 42.0	1.516 - 1.654	**832 020 027**	0.550
Centering cartridge	C	23	41.5 - 45.0	1.634 - 1.772	**832 020 028**	0.560
Centering cartridge	C	24	44.5 - 48.0	1.752 - 1.890	**832 020 029**	1.000
Centering cartridge	C	25	47.5 - 51.0	1.870 - 2.008	**832 020 030**	1.200
Threaded screw DIN913-M5x5-A2 for group C					**445 005 222**	
Arbor for centering cartridge for group D					**832 020 031**	0.215
Centering cartridge	D	26	50.5 - 54.0	1.988 - 2.126	**832 020 032**	1.500
Centering cartridge	D	27	53.5 - 58.0	2.106 - 2.283	**832 020 033**	1.800
Centering cartridge	D	28	57.5 - 62.0	2.264 - 2.441	**832 020 034**	1.900
Centering cartridge	D	29	61.5 - 66.0	2.421 - 2.598	**832 020 035**	2.100
Centering cartridge	D	30	65.5 - 70.0	2.579 - 2.756	**832 020 036**	2.400
Centering cartridge	D	31	69.5 - 74.0	2.736 - 2.913	**832 020 037**	2.600
Centering cartridge	D	33	77.5 - 82.0	3.051 - 3.228	**832 020 039**	3.100
Centering cartridge	D	34	82,0 - 87,0	3.228 - 3.425	**832 020 045**	3,100
Centering cartridge	D	36	91,0 - 95,0	3.582 - 3.740	**832 020 047**	3,300
Centering cartridge	D	37	95,0 - 99,0	3.740 - 3.897	**832 020 048**	3,960
Centering cartridge	D	38	97,5 - 102,0	3.839 - 4.016	**832 020 049**	

* Other dimensions on request.

Other accessories for orbital welding

- Ground cable
- ESG electrode grinders
- WS2 tungsten electrodes
- Torch and cold wire accessories